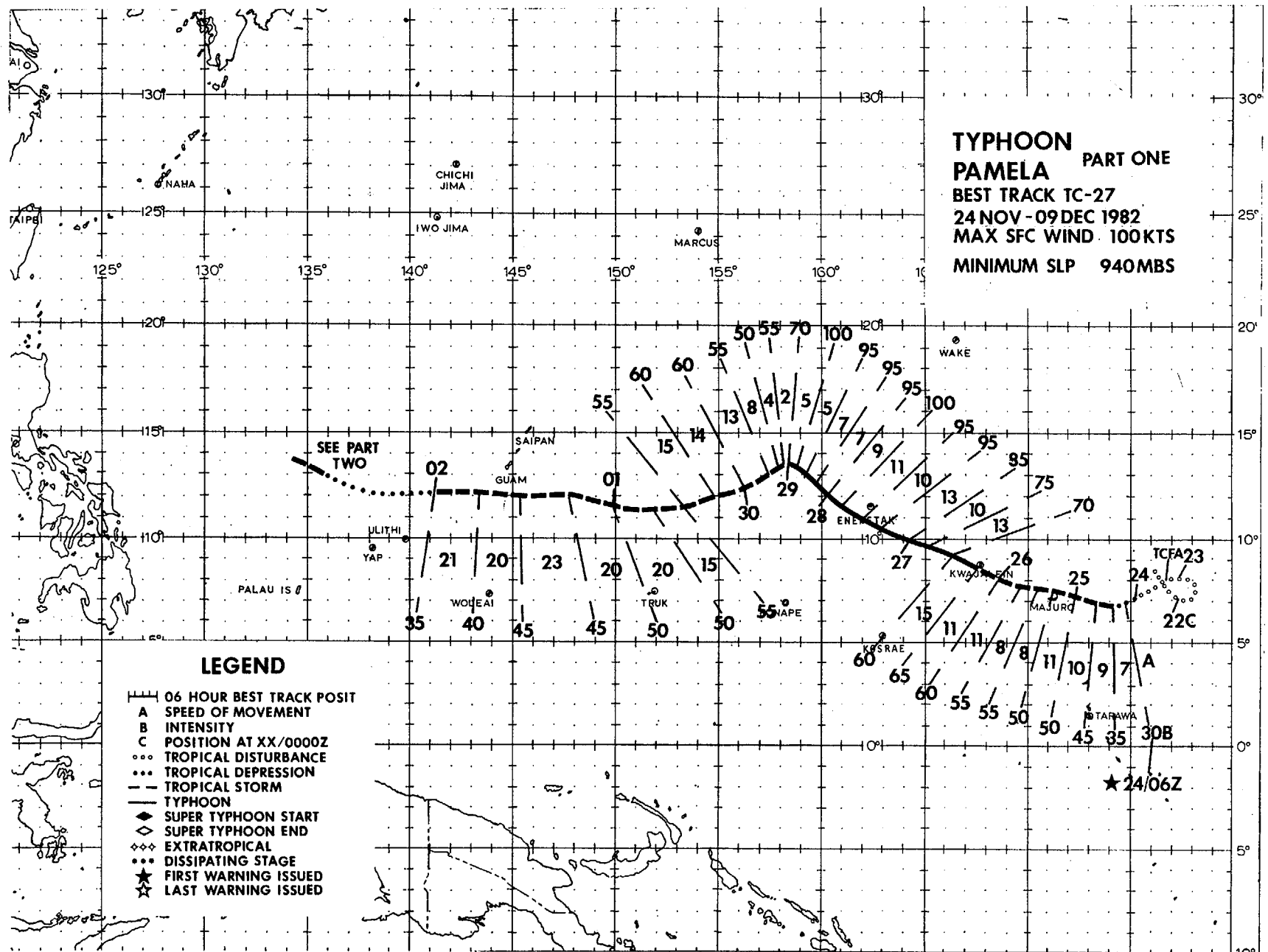


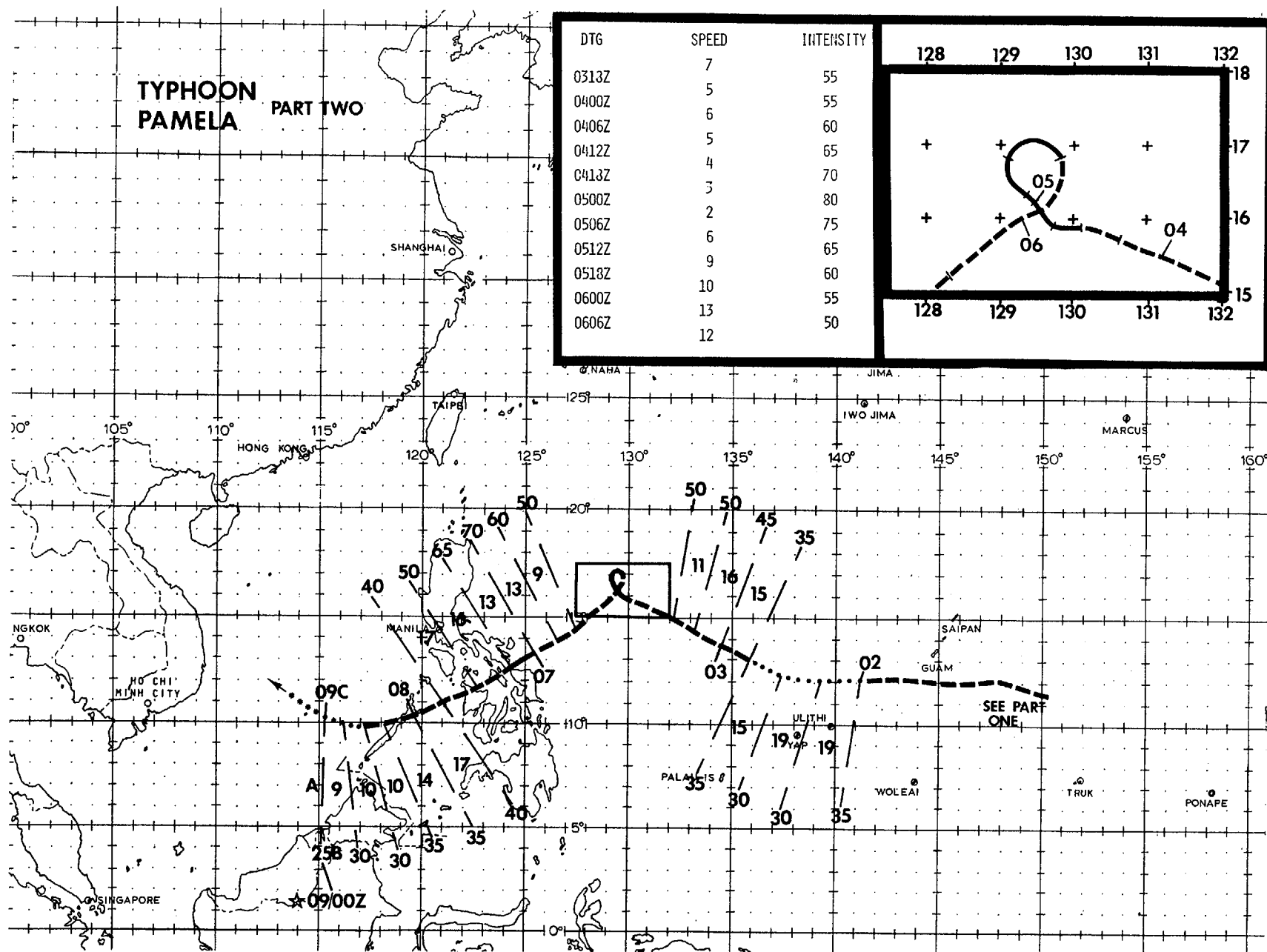
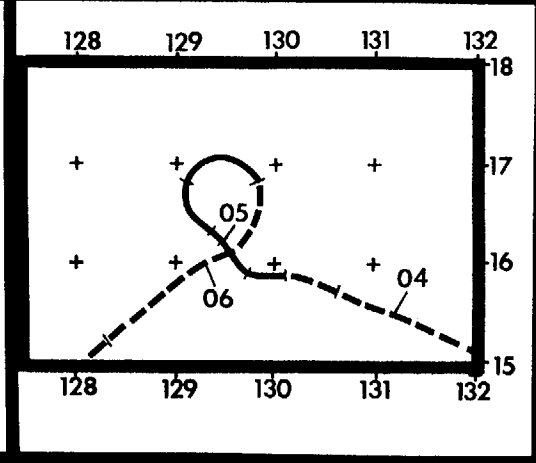
TYPHOON
PAMELA PART ONE
 BEST TRACK TC-27
 24 NOV - 09 DEC 1982
 MAX SFC WIND 100KTS
 MINIMUM SLP 940MBS

114



TYPHOON PAMELA PART TWO

DTG	SPEED	INTENSITY
0313Z	7	55
0400Z	5	55
0406Z	6	60
0412Z	5	65
0418Z	4	70
0500Z	3	80
0506Z	2	75
0512Z	6	65
0518Z	9	60
0600Z	10	55
0606Z	13	50
	12	



Typhoon Pamela, the 27th significant tropical cyclone of the season, formed east of the Marshall Islands on 24 November. Uncommon for a late season tropical cyclone, Pamela went on to become the longest running, in terms of time and distance, tropical cyclone of the year before dissipating in the South China Sea on 9 December. During its active warning period, Pamela was upgraded to typhoon status on four distinct occasions (reduced to three in post-analysis), a very rare phenomenon.

Development was first observed on 21 November with the formation of an upper-level anticyclone which had some convective activity along its northern outflow band. Visual satellite imagery on 22 November showed a low-level circulation was present near 6N 177E. During the next 48 hours, this disturbance lingered in the region east of 175E with convective activity fluctuating near the center; however, a slow increase in organization, conducive to further development, was observed.

The slow development of this disturbance is attributed to the proximity of Hurricane Iwa (04C) in the eastern North Pacific. As Iwa moved northeastward and passed the Hawaiian Islands, the disturbance (Pamela) began moving westward. A noticeable increase in convection was observed, leading to the

issuance of a Tropical Cyclone Formation Alert at 230600Z for an area east of Majuro Atoll. The system further organized, thus prompting the initial warning on Tropical Depression 27 at 240600Z. When the system developed a central convective feature, accompanied by a well-defined upper-level outflow pattern, it was upgraded to Tropical Storm Pamela at 241200Z.

The first several warnings called for movement toward the west-northwest with gradual intensification. These warnings were based on a forecast weakening of the subtropical ridge northwest of the system under the influence of a mid-latitude trough moving eastward from Japan. Indeed, Pamela moved west-northwestward through the Marshall Islands in the ensuing 84 hours. Satellite and aircraft reconnaissance data confirmed the gradual intensification of the system, with Pamela attaining typhoon status at 260600Z while passing approximately 60 nm (111 km) south-southeast of Kwajalein Atoll. By the time Pamela passed 35 nm (65 km) southwest of Enewetak Atoll at 271200Z, its intensity was estimated (from aircraft data) to be 95 kt (49 m/sec) (Figure 3-27-1). Initial reports from the Marshall Islands indicated moderate to severe damage to buildings and crops from those islands affected by Pamela's passage, but there were no reports of loss of life.

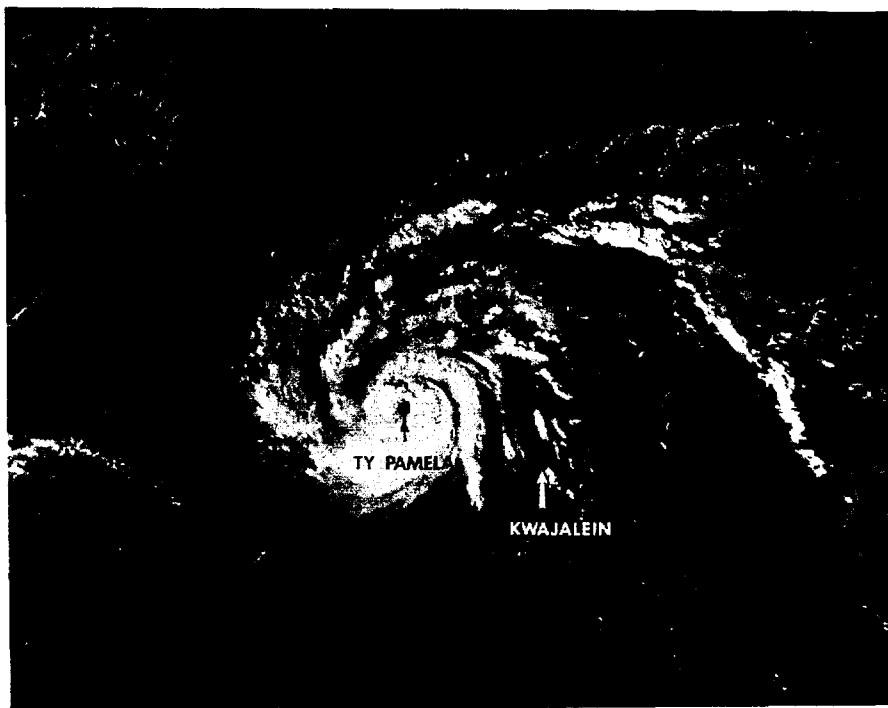


Figure 3-27-1. Typhoon Pamela, 15 hours prior to reaching maximum intensity of 100 kts (51 m/sec), 270348Z November (NOAA 7 visual imagery).

Once past the Marshall Islands, Pamela's forward speed began to slow as the system started to come under the influence of a mid-latitude trough passing to the north. As Pamela approached 19N it began to rapidly weaken as it encountered a mid- to upper-level shear zone associated with the trough. Evidence of the rapidity with which Pamela weakened is seen in the aircraft reconnaissance data. At 282105Z, a central pressure of 950 mb and an observed 100 kt (51 m/sec) surface wind were reported. A second reconnaissance mission about nine and one-half hours later (at 290640Z) reported a 979 mb central pressure and observed surface winds of only 50 kt (26 m/sec). This second report necessitated the downgrading of Pamela to tropical storm status on the subsequent warning. A much-weakened Pamela then moved toward the southwest and began to accelerate after breaking away from the effects of the trough and shear zone. This movement was in response to a strong northeast monsoonal flow which was present in the wake of the eastward-moving mid-latitude trough.

Commencing with the 291800Z warning, Pamela was forecast to reintensify and move westward along the southern periphery of the subtropical ridge, eventually passing near the island of Guam. The residents of Guam, remembering the devastation caused by Super Typhoon Pamela (May, 1976), had been nervously watching "Pamela's" progress since its designation while still some 1800 nm (3335 km) east of Guam. Needless-to-say, island residents began to prepare for a possible repeat of the conditions associated with Pamela's 1976 namesake.

Pamela continued to accelerate toward the southwest until 301200Z when it began to move westward. During this period, Pamela continued to weaken; instead of gaining the expected mid- and upper-level support for reintensification, Pamela remained disorganized and the anticipated intensification did not materialize. The 011200Z December 500 mb analysis, for example, did not show any mid-tropospheric circulation center near Pamela's low-level vortex.

Although Pamela was still weakening, it was considered a potentially dangerous tropical cyclone. At 011200Z, Pamela was located 90 nm (169 km) southeast of Guam and was moving westward at 23 kt (42 km/hr); its closest point of approach (to Guam) came two hours later with the maximum recorded wind (gust) of 40 kt (21 m/sec), far below the 138 kt (71 m/sec) gust observed during Super Typhoon Pamela in 1976.

At 011532Z, a reconnaissance aircraft was able to locate Pamela's 700 mb center 90 nm (169 km) southwest of Guam. Data from this fix indicated that Pamela's intensity had decreased to 49 kt (21 m/sec). The same aircraft was tasked to provide another fix of the 700 mb center at 011800Z but was unable to close off the circulation (the surface center was not observable due to darkness). The Mission Aerial Reconnaissance Weather Officer (ARWO) felt that the 700 mb center had dissipated into a trough, providing further evidence that Pamela was continuing its weakening trend. A "resources permitting" "first-light" aircraft fix was requested for 012200Z. The aircraft orbited south of the main convection until daybreak; then, responding to a satellite position provided to JTWC by Det 1, LWW, the aircraft was able to locate the surface center at 012150Z with an estimated 35 kt (19 m/sec) intensity.

During the next 24 hours, Pamela continued to move westward and weaken. Satellite imagery (Figure 3-27-2) and aircraft reconnaissance data revealed that Pamela had become a tropical depression by 020600Z. During this period, JTWC was forecasting Pamela to dissipate as a significant tropical cyclone over water within 48 hours.

Pamela, again as Tropical Depression 27, started to slow its forward speed and began to move toward the northwest, responding to another mid-latitude trough moving off the coast of Asia. Once this northwest movement began, indications that Pamela might reintensify became evident. First, the 021200Z 500 mb analysis suggested that a mid-tropospheric circulation had reformed; and second, aircraft reconnaissance at 022126Z was once again able to close off a 700 mb center with data indicating that an intensity of 35 kt (18 m/sec) had been reached. Later reconnaissance aircraft missions showed that Pamela was continuing its reintensification and it passed from tropical storm status to typhoon status (again) at 041200Z. During this period of reintensification, Pamela reached a maximum intensity of 80 kt (41 m/sec) while concurrently slowing to a minimum speed of 2 kt (4 km/hr) at 050000Z (Figure 3-27-3).

JTWC objective forecast aids and FNOG prognostic fields began to indicate the potential for recurvature once Pamela approached the axis of the (mid-tropospheric) subtropical ridge, near 17N. The 040000Z warning was the first to reflect a recurvature scenario. The numerical prognostic

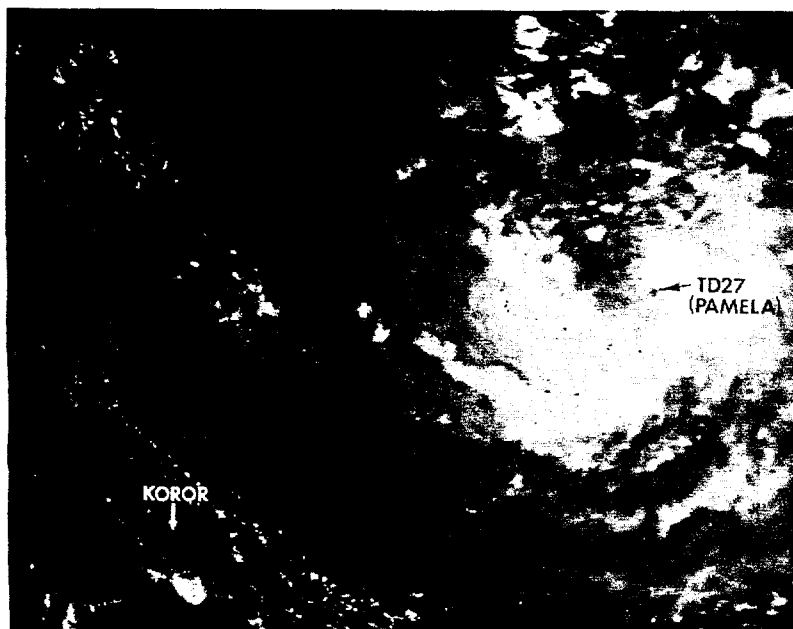


Figure 3-27-2. Pamela, now Tropical Depression 27, with estimated intensity of 30 kts (15 m/sec). 020611Z December (NOAA 7 visual imagery).

fields, from which this scenario was derived, forecast the subtropical ridge to weaken at all levels as a mid-latitude trough deepened in the East China Sea. This meteorological situation would allow Pamela to recurve toward the northeast, accelerate, and undergo an extratropical transition. However, the low-level (850 mb and below) ridge did not weaken as indicated by the prognostic series, and Pamela went on to complete a small anticyclonic loop and moved southwestward toward the Philippines. Early in the loop, Pamela began to interact with the mid-latitude westerlies and once again the effect of increased vertical wind shear weakened Pamela from 80 kt (41 m/sec) to 50 kt (26 m/sec) over a 30-hour

period. However, as Pamela moved southwestward, the subtropical ridge to the north began to strengthen at all levels, allowing Pamela to reintensify to a typhoon for the third time. Pamela reached a maximum intensity of 70 kt (36 m/sec) about six hours prior to entering the islands of the central Philippines.

As Pamela moved through the Philippines and weakened, Tropical Depression 28 (Roger) formed in the Philippine Sea. The combined effects of interaction with the topography of the islands and a shift in the low-level wind regime toward Roger caused Pamela to weaken rapidly and eventually brought on its dissipation over the South China Sea.

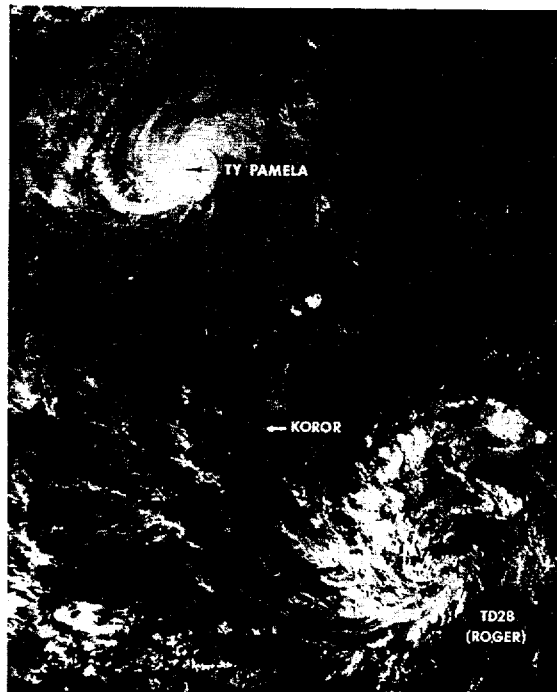


Figure 3-27-3. Typhoon Pamela, nearly six hours after attaining a second maximum intensity of 80 kts (41 m/sec). To the south, this imagery also shows Typhoon Roger in its formative stages. 050534Z December (NOAA 7 visual imagery).